

Claims

1. A target travel direction detecting method comprising:
an image acquiring step of acquiring an image including a target
picked up at predetermined time intervals;

an extracted image creating step of creating an image
including an arbitrary component extracted from the image;

a target position detecting step of causing a matrix
template to scan the extracted image at time t to detect the
position of the target;

a pixel value storing step of storing each pixel value
of the extracted image at time t into the template;

a value-matching pixel detecting step of causing a
template storing the pixel value to scan the extracted image
at time $t+1$ to detect the position of a pixel whose value matches
a pixel value of the template; and

a travel-direction-extracted image creating step of
plotting a pixel value set to accordance with the travel
direction of the target at the same coordinate position as the
pixel position detected in the value-matching pixel detecting
step to create a travel-direction-extracted image.

2. A target travel direction detecting method comprising:
an image acquiring step of acquiring an image including a target
picked up at predetermined time intervals;

an extracted image creating step of creating respective

images including arbitrary components extracted from the image;

a target position detecting step of respectively causing a matrix template to scan each of the extracted images at time t to respectively detect the position of the target;

a pixel value storing step of storing each pixel value of each of the extracted images at time t into each of the templates;

a value-matching pixel detecting step of causing each template storing the pixel value to scan each of the extracted images at time $t+1$ to respectively detect the position of a pixel whose value matches each pixel value of each of the templates; and

a travel-direction-extracted image creating step of plotting a pixel value set to accordance with the travel direction of the target at the same coordinate position as each of the pixel positions detected in the value-matching pixel detecting step to respectively create a plurality of travel-direction-extracted images and obtain, per pixel, the mean value of the plurality of travel-direction-extracted images in order to create a complex travel-direction-extracted image.

3. The target travel direction detecting method according to claim 1 or 2, wherein

the travel-direction-extracted image creating step

includes a speed calculating step of obtaining a speed of the target based on the distance between the position of a first center of gravity as a center of gravity of the target in a first travel-direction-extracted image created based on an image picked up at time t and an image picked up at time $t+1$, and the position of a second center of gravity as a center of gravity of the target in a second travel-direction-extracted image created based on an image picked up at time $t+1$ and an image picked up at time $t+2$.

4. The target travel direction detecting method according to any one of claims 1 through 3, wherein

the extracted image creating step selects and extracts a lightness component, a hue component and a chroma component from a color image.

5. The target travel direction detecting method according to any one of claims 1 through 4, comprising

a space-time image creating step of creating a space-time image where images in a predetermined area extracted from each of the travel-direction-extracted images created in the travel-direction-extracted image creating step are arranged in chronological order.